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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,107	12/09/2005	Igor Lubomirsky	LUBOMIRSKY1	2902
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EXAMINER NGUYEN, KHANH TUAN				
ART UNIT		PAPER NUMBER		
1796				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/560,107

Applicant(s)

LUBOMIRSKY, IGOR

Examiner

KHANH T. NGUYEN

Art Unit

1796

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 24-41 is/are pending in the application.
- 4a) Of the above claim(s) 2,3 and 38-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-20,24-37 and 41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment filed on 04/09/2009 is entered and acknowledged by the Examiner. Claims 1-20, 24-40, and newly added claim 41 are currently pending in the instant application with claims 2-3 and 38-40 withdrawn from further consideration. Claim 24 is rejoined in view Applicant's amendment to direct the instant claim to the elected subject matter. Claims 21-23 have been canceled.

Claim Status

2. The objection of claim 1 and 29-30 due to minor informality is withdrawn in view of Applicant's amendment.

3. The rejection of claims 1, 4, 15, 18, 25, 26, 29, 30, 36, and 37 under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. 4,601,883 (Sekido) is withdrawn in view of Applicant's remark. The rejection of claims 1, 4-6, 8, 9, 11, 12, 15, 17-20, 25-30, 36, and 37 under 35 U.S.C. 102(a/e) as being anticipated by U.S. Pub. 2002/0117647 A1 (Roeder) is withdrawn in view of Applicant's remark. The rejection of claims 1, 4-6, 8, 9, 11, 12, 14-20, 25-27, 29-30, 36, and 37 under 35 U.S.C. 102(a/e) as being anticipated by U.S. Pub. 2002/0177008 A1 (Shirakawa) is withdrawn in view of Applicant's remark. The rejection of claims 1, 4-13, 15, 17-20, 25-30, and 36-37 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Pat.

5,472,777 (Kineri) is withdrawn in view of Applicant's remark. The rejection of claims 31-35 under 35 U.S.C. 103(a) as being unpatentable over either U.S. Pat. 4,601,883 (Sekido), U.S. Pub. 2002/0117647 A1 (Roeder), U.S. Pub. 2002/0177008 A1 (Shirakawa) or U.S. Pat. 5,472,777 (Kineri) is withdrawn in view of Applicant's remark.

Claim Rejections - 35 USC § 102/103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 4-20, 24-33, 36-37, and 41 are rejected under 35 U.S.C. 102(a/e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Pub. 2003/0033700 A1 (hereinafter refer to as Takeuchi).

Takeuchi teaches an inorganic oxide material having a piezoelectric and electrostrictive properties that is useful for forming a film on ceramic substrate (Abstract; [0093]) as recited in claims 25-26. The ceramic substrate is considered to encompass SiO₂ and glass as recited in claim 27 since SiO₂ and glass are common ceramic substrates. Takeuchi teaches a piezoelectric material forming a layer with a thickness of not more than around 3-40 microns [0115]. The lower limit of not more than around 3 microns thick is considered to read on the claim thickness of below 0.5 microns as recited in claim 28. The piezoelectric material may in an amorphous form, i.e. non-crystalline solid [0093]. The amorphous (non-crystalline solid) material is expected to lack spatial periodicity as claimed. The piezoelectric material may be polarized by a

polarization treatment [0093] as recited in claim 41. Takeuchi teaches the piezoelectric material composed of the ingredients such as alkali metals, alkali earth metals, rare earth metals, and elements of Group IVA as recited in claims 4-13 [0095-0096; and 0098], thus the piezoelectric material of Takeuchi is considered to include the compound having the formulas as recited in claims 4, 14, 17, 19-20, and 24 where A or B is selected from element of Group IVA such as lead (Pb). Takeuchi teaches the proportion of the piezoelectric material may be adjusted [0094]. Thus, Takeuchi is considered to teach a material compose of an inorganic oxide compound having non-crystalline solid, i.e. quasi-amorphous, with piezoelectric properties as recited in claims 1 and 24. Moreover, the piezoelectric material of Takeuchi is expect to have the same or substantially similar property, i.e. pyroelectric coefficient, as recited in claims 14, 15, and 18 because the court has held that structurally similar compounds (i.e. non-crystalline oxide compounds) are generally expected to have similar properties (such as pyroelectric coefficient). In re Gvurik, 596 F. 2d 1012,201 USPQ 552. Takeuchi further teaches the piezoelectric material may be used in devices such as sensor, sound-emitting device (i.e. acoustic wave propagation element) as recited in claims 29-33 and 36-37 [0135].

The reference specifically or inherently meets each of the claimed limitations in their broadest interpretations. The reference is anticipatory.

In the alternative that the above disclosure is insufficient to anticipate the above listed claims, it would have nonetheless been obvious to the skilled artisan to produce the claimed pyroelectric compound having the claimed structure because the general

condition of the claims are disclosed in the prior art, and discovering the optimum formula involves only routine skill in the art to adjust the proportion of said pyroelectric compound to a desirable composition as suggested by Takeuchi [0093].

Furthermore, claim 24 is product-by-process claim and is not limited to the manipulations of the recited steps, i.e. prepared by applying a mechanical strain to prevent crystallization thereby obtaining said pyroelectric compound, only the structure limited by the steps. Therefore, the patentability of the product does not depend on its method of production and the claimed steps were not given patentable weight.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pub. 2003/0033700 A1 (Takeuchi).

Although the prior art did not teach the inorganic compound use as a birefringent medium, nonetheless a prima facie case of obviousness exists because the different intended uses are not distinguishable in terms of the inorganic compound composition, see *In re Thuau*, 57 USPQ 324; *Ex parte Douros*, 163 USPQ 667; and *In re Craig*, 89 USPQ 393.

In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

Response to Arguments

8. Applicant's arguments with respect to claims 1, 4-20, and 25-37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHANH T. NGUYEN whose telephone number is (571) 272-8082. The examiner can normally be reached on Monday-Friday 7:00-4:00 EST PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Kopec/
Primary Examiner, Art Unit 1796

/KTN/
Examiner
05/14/2009